

Claims

1. Device for producing any desired portions (6) and formats (5) of products (2), comprising an aligning belt (1) which conveys the products (2) and at a transfer edge (4) transfers them to a portioning belt (3) on which the portions (6) and the formats (5) are produced and with which the products are preferably conveyed onwards as corresponding portions (6) and/or in the respective format (5), characterised in that the position of the transfer edge (4) can be changed relative to the portioning belt (3), at least in one direction (7, 8), and/or the position of the portioning belt (3) is constructed to be movable relative to the transfer edge, at least in one direction (9, 10), and the position of the transfer edge (4) and the movement of the portioning belt (3) are coordinated with one another such that any desired portions (6) and formats (5) can be produced with the products.
2. Device according to claim 1, characterised in that the position of the transfer edge (4) can be changed in and counter to the conveying direction (11) of the aligning belt (1), in that the portioning belt (3) is movable relative to the transfer edge (4) in one direction (10), and in that the angle between the conveying direction (11) and the direction of movement (10) of the portioning belt is preferably 90° or 270°.
3. Device according to claim 1, characterised in that the position of the transfer edge (4) in the conveying direction (11) and transversely to the conveying direction (11) of the aligning belt (1) can be changed as desired.
4. Device according to claim 1, characterised in that the portioning belt (3) is constructed so as to be movable, at least in two directions (9, 10) which are preferably perpendicular to one another.
5. Device according to claim 1, characterised in that the position of the transfer edge (4) can be changed in and counter to the conveying direction (11) of the

aligning belt (1), and in that it comprises a means (12) with which the products can be lined up on the aligning belt (1) relative to the central track (13).

5 6. Device according to any one of the preceding claims, characterised in that it comprises a plurality of aligning belts (1) and/or a plurality of portioning belts (3).

7. Device according to claim 6, characterised in that the conveying direction (11, 14) of the aligning belts (1) and/or of the portioning belts (3) is the same and/or or opposed.

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8. Device according to any one of the preceding claims, characterised in that the transfer edge (4) is displaceably mounted on the aligning belt (1) and displacement preferably takes place via a servomotor.

15 9. Device according to any one of the preceding claims, characterised in that the portioning belt (3) is also a loading belt.

10. Device according to any one of the preceding claims, that the end (15) of the portioning belt (3) is displaceably mounted and displacement preferably takes place
20 via a servomotor.

11. Device according to any one of the preceding claims, characterised in that the aligning belt (1) and/or the portioning belt (3) is/are driven by a servomotor.

25 12. Device according to any one of the preceding claims, characterised in that it comprises a detection means which detects the position of the products on the aligning belt (1), at least in the conveying direction (11).

13. Device according to any one of the preceding claims, characterised in that it
30 comprises a controller with which the desired portion patterns and the formats may be freely programmed and stored.

14. Device according to any one of the preceding claims, characterised in that the speed of the aligning belt is constant.
15. System comprising a device according to any one of claims 1 to 14 and a
5 packaging machine (16), wherein the portioning belt (3) is also a loading belt which places the portions in packaging cavities which are conveyed along the packaging machine preferably in a clocked manner.
16. System according to claim 15, characterised in that the portioning belt (3) is
10 arranged at a right angle to the packaging machine (16).
17. System according to either claim 15 or claim 16, characterised in that the aligning belt is arranged at a right angle to the portioning belt (3).
18. System according to any one of claims 15 17, characterised in that the device
15 is coordinated with the clock rate of the packaging machine.
19. Method for producing any desired portions (6) and formats (5) of products (2), comprising an aligning belt (1) which conveys the products (2) and transfers
20 them at a transfer edge (4) to a portioning belt (3) on which the portions (6) and/or the formats (5) are produced and with which the products are preferably conveyed onwards as a corresponding portion (6) and in the respective format (5), characterised in that the position of the transfer edge (4) relative to the portioning
25 belt (3) is changed, in at least one direction and (7, 8), and/or the position of the portioning belt (3) is moved relative to the transfer edge, at least in one direction (9, 10), and the position of the transfer edge (4) and the movement of the portioning belt (3) are coordinated with one another such that any desired portions (6) and formats (5) are produced with the products.
20. Method according to claim 19, characterised in that the position of the transfer edge (4) is changed in and counter to the conveying direction (11) of the aligning belt (1), in that the portioning belt (3) is moved relative to the transfer edge

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(4) in one direction (10), and in that the angle between the conveying direction (11) and the direction of movement (10) of the portioning belt is preferably 90° or 270°.

21. Method according to claim 19, characterised in that the position of the transfer edge (4) in the conveying direction (11) and transversely to the conveying direction (11) of the aligning belt (1) is changed as desired.

22. Method according to claim 19, characterised in that the portioning belt (3) is moved at least in two directions (9, 10) which are preferably perpendicular to one another.

23. Method according to claim 19, characterised in that the position of the transfer edge (4) is changed to the conveying direction (11) of the aligning belt (1), and in that the products on the aligning belt (1) are each positioned in a specific position relative to the central track (13) on the aligning belt (1).

24. Method according to any one of claims 19 to 23, characterised in that the transfer edge (4) is displaced relative to the aligning belt (1), preferably by a servomotor.

25. Method according to any one of claims 19 to 24, characterised in that the products are also placed in a packaging by the portioning belt (3).

26. Method according to any one of claims 19 to 25, characterised in that the position of the products on the aligning belt (1) is detected, at least in the conveying direction (11), via a detection means.

27. Method according to any one of claims 19 to 26, characterised in that it is controlled by a controller in which at least one amount for the clock rate of the portioning belt is stored.

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28. Method according to claim 27, characterised in that the controller then generates a signal for clocking at the drive of the portioning belt when the row of the format is complete.
- 5 29. Method according to any one of claims 19 to 28, characterised in that the speed of the aligning belt is constant.